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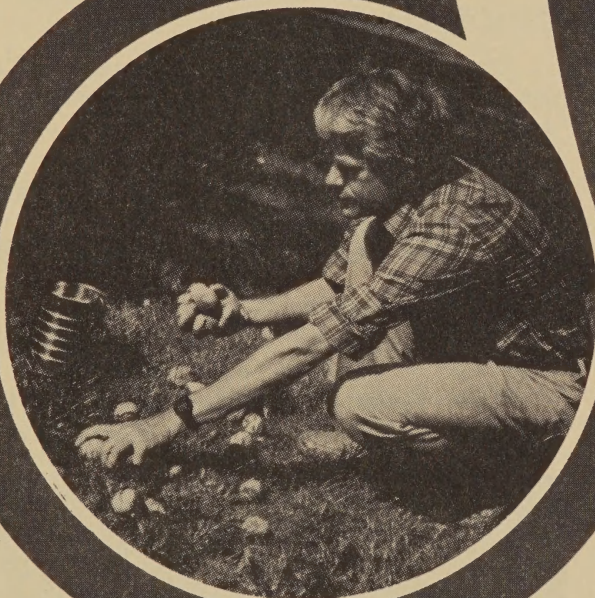
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# HOW TO

## Start Walnut Trees from Seed



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United States  
Department of  
Agriculture

PREPARED BY NORTH CENTRAL FOREST  
Forest Service Experiment Station

Planting walnut seeds can be satisfying in the immediate present and profitable for the distant future. Direct seeding black walnut plantations offers several advantages over planting seedlings.

1. Seeds are easier to store and transport to the planting site.
2. Seedlings from seeds develop normal taproots that don't have to be interrupted by transplanting.
3. Seeds can be gathered in the fall and planted immediately or kept until the following spring.
4. Seeds of selected, high quality walnut trees can be planted rather than run-of-the-mill walnut seedlings.

On the debit side of direct seeding:

1. Uncertain viability may require sowing two to four seeds per seed spot.
2. Pilfering by squirrels may make some sort of seed protection necessary.

If you follow the guidelines suggested here, you can assure yourself of maximum success in your tree-growing endeavors.

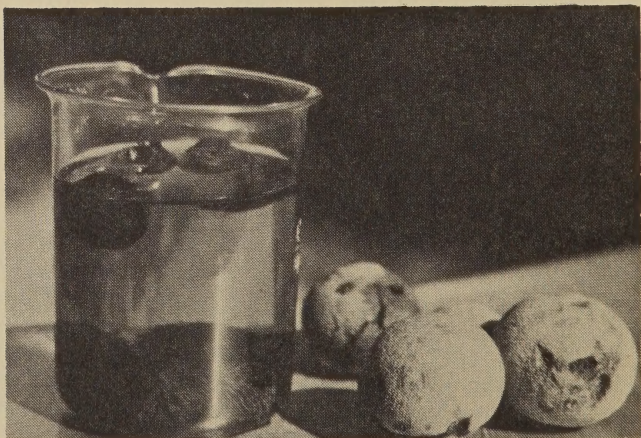
## CHOOSING A GOOD SITE

Choosing an appropriate site will be your first order of business. Remember that black walnuts grow best in soil that is:

1. medium texture (loam or silt loam)
2. deep, well drained (soil depth deeper than 3 feet)
3. not stony
4. on north or east-facing slopes (if planting on rolling, hilly ground)
5. not compacted (avoid former pastureland).

Seed may be planted with or without husks. Regardless which you choose, be sure to use "good" seed.

Freshly husked seeds may be tested by placing them into a container of water. Those that sink are usually sound



and will likely germinate; those that float are probably not good and should be discarded.

Seeds with husks are messy to handle and are harder to judge. Best way is to crack open a dozen or so and examine the "meat" for signs of decay or a greyish color.



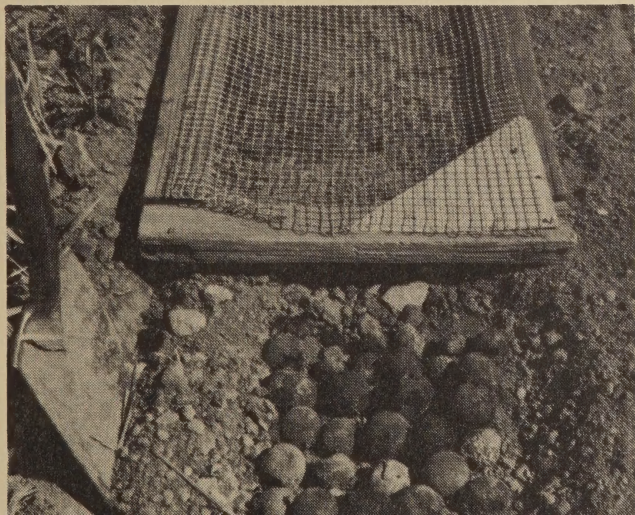
Viable nuts have white, sound-looking meat. Planting more than one nut per spot will help to assure getting a seedling in each spot. The percentage of viable seed in your sample will determine how many to plant. Use the following table as a guide:

Percent sound seed	Number of seeds per spot
80-100	2
60-80	3
40-60	4
less than 40	5 or more

## STORING SEED

If fall-gathered nuts are going to be kept for spring planting they must be properly stored. Two methods may be used:

1. Place 2 or 3 layers of nuts between layers of sand in a 2-foot deep trench or pit. The trench should be in a



well drained but moist site. Cover the trench with at least 1 foot of soil to prevent excessive freezing or drying. Do not let the nuts dry out before, during, or after stratification. Nuts that are stored dry through the winter generally do not germinate. The trench should be covered with hardware wire so squirrels can't steal them.

2. Place the nuts in a plastic garbage bag, add moist peat or sphagnum moss and tie the bag shut. Store in a cool place, such as a walk-in cooler or even a refrigerator (about 40°F temperature) for 120 days or until spring and the ground is ready for planting.

## PREPARING THE SITE

Before sowing seeds, the planting site should be prepared to kill competing vegetation. This can be done by cultivation (plowing, discing, or rototilling) or with combinations of preemergent and postemergent herbicides. Recommended techniques include:

1. Plow and disc the entire planting site if soil erosion will not occur.
2. Spray 4-foot-wide strips at the planting site and plant the nuts down the middle at the desired spacing, or
3. Spray a series of 4-foot circles at the desired spacing and plant your seeds in the center of each spot. A properly squared spacing will allow for plantation maintenance by machine in both directions.

*Note: Be sure to follow label recommendations when using herbicides to control vegetation at your planting site.*

## PLANTING THE SEEDS

Seed may be planted early in the fall so that the necessary stratification occurs naturally or in the spring if the seed has been stratified. Improper stratification or dry soil may delay germination until the second year after planting.

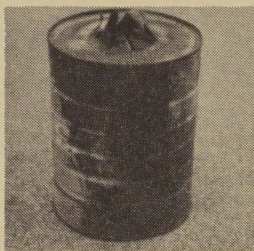
Seed should be planted on its side approximately 2 to 3 inches deep, 3 to 8 inches apart. If more than one seedling grows from a seed spot, select the best seedling and remove the competitors the second year. Excess seedlings are easily removed by cutting off the stem with a flat spade just below the root collar. (You may want to transplant the extras to empty seed spots.) If the area is to be strip sprayed with herbicide in the future, nuts within a seed spot should be planted in a single file parallel to the rows. If using spot spraying, use a triangular pattern for 3 seeds or a square pattern for 4 seeds within each seed spot. This helps keep rows straight, minimizes size of herbicide circles, and minimizes amount of materials needed if mechanical barriers are needed to prevent predation.



## PROTECTING THE SEEDS

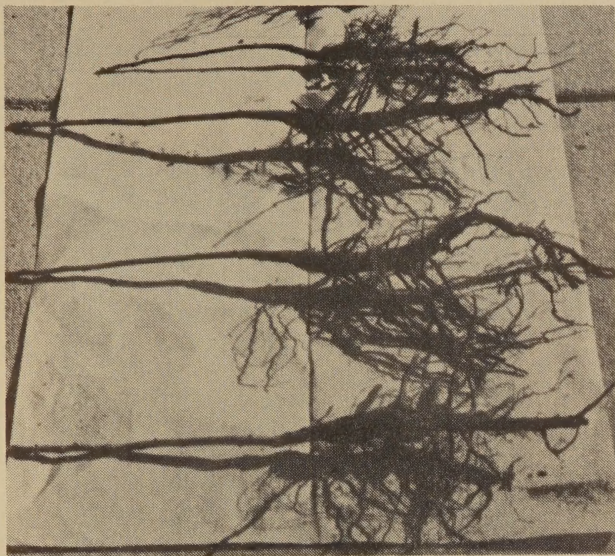
Squirrels and other rodents can cause serious pilferage problems. There are two methods to protect seed from rodents—use of repellents or mechanical barriers. One repellent that works is a generous portion of fresh cow manure over each seed spot; this masks the odor coming from the nuts below ground. Cultivated planting sites surrounded by wide, open areas will discourage squirrels and other rodents from entering your planting sites by encouraging the presence of owls, hawks, and mammal predators.

Mechanical barriers can be made from  $\frac{1}{2}$ " hardware cloth or tin cans. Hardware cloth squares 12" larger than the seed spot can be cut and placed over the seed spot. Use metal pins made from #9 galvanized wire to hold down the corners. This protects the seed and allows the seedling to grow through the wire. Remove the hardware cloth in the fall after the seedlings shed their leaves and before they develop branches to prevent girdling of the seedlings.



Tin cans need to be placed in a fire to remove the tin coating (so they will rust and disintegrate). Cut out one end of each can and make an X-cut in the other end. Pry up the 4 points to make a 1-inch opening. Hold the can open end up and add 1 inch of soil. Drop in a nut and pack can full of soil. Place in planting hole with open end down. The can should be covered with an inch or two of soil. Mechanical barriers to rodent pilfering are effective but time-consuming to make and not practical when dealing with a large number of nuts.

Once you have a plantation of healthy seedlings, you will be glad that you took the time and trouble to collect, clean, and sow the seeds. You will have had the fun; your children and grandkids will reap the profit from the nut and timber crops.



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